SMELT WORKING GROUP
Monday, April 6, 2009

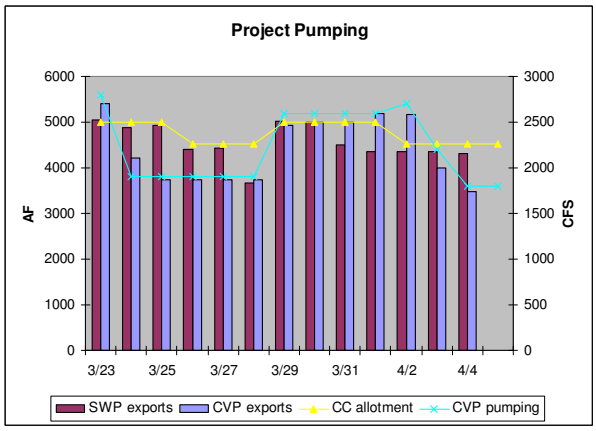
Recommendation for the week of April 6, 2009:

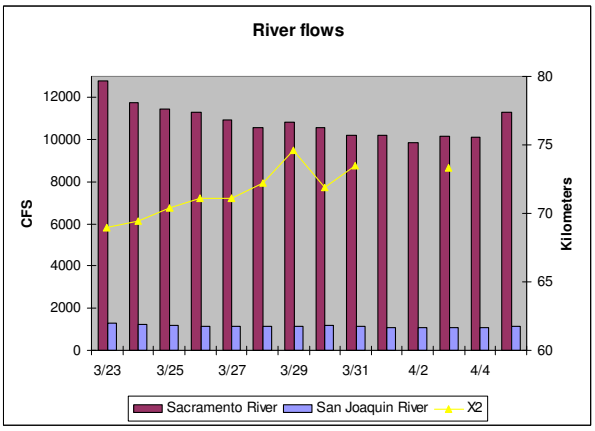
The group recommends to the Service that OMR be maintained at -4000 cfs on a 14-day average for the next week. The group is monitoring delta smelt salvage and will reconvene and potentially make further recommendations should a one-day, combined expanded salvage of adult delta smelt reach 20 or greater. The group also recommends that OMR be set at -2000 cfs on a 14-day average if any salvage of larval delta smelt occurs.

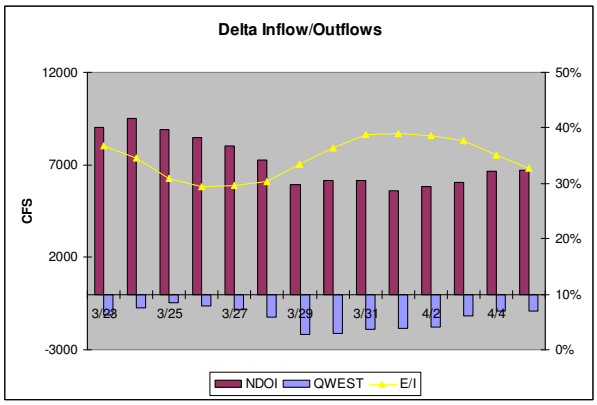
1) Current environmental data.

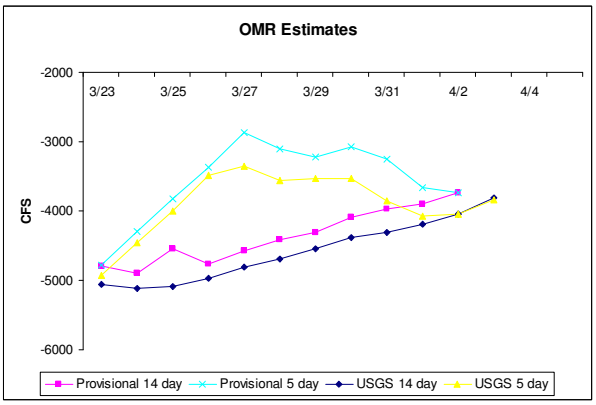
Temperature for the 3 station average is 15.5 C. The provisional OMR estimate by the projects as of April 2 is -3734 cfs for 14 day average, -3740 cfs for 5 day average. USGS OMR as of April 3 is -3805 cfs 14 day average and -3831 cfs for 5 day average. Sacramento River inflow into the Delta has been between 10,000 and 11,000 cfs since late March and as of April 5 is at 11294 cfs. QWEST as of April 5 is at -926 cfs. X2 is at 73 km as of April 3.

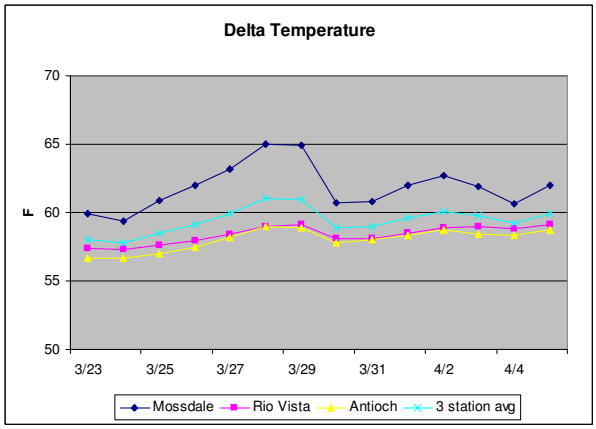
The Projects dropped pumping for April 6 to approximately 2000 cfs combined pumping. The data are depicted in the graphs below.

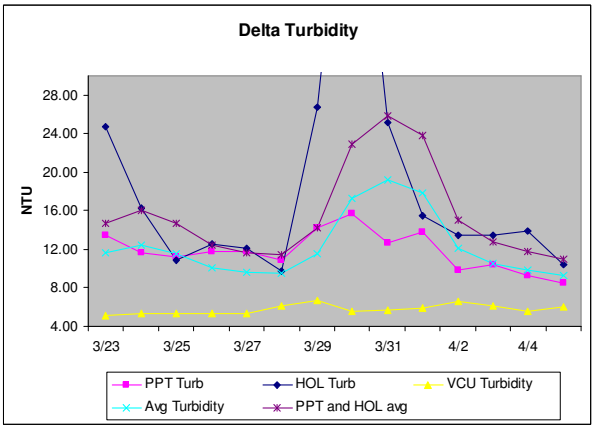












2) Delta fish monitoring:

There was no new survey sampling, but 20mm Survey 2 data were updated last week with more samples processed from Suisun Bay and Marsh, Napa River, Carquinez Strait and San Pablo Bay: no delta smelt larvae have been detected to date; relatively high concentrations of longfin smelt larvae and small juveniles were identified in Montezuma Slough, Grizzly Bay and Chipps Island; and in-Delta longfin smelt catches (for processing completed to date) made up only 6% of the summed catch per unit effort in the survey. 20mm Survey #3 is in the field this week. Spring Kodiak Trawl #4 is in the field the week of April 13. Bay Study sampling within the Delta will occur during the week of March 6. Results from previous larval surveys, 20mm surveys and the SKT are available online at:
http://www.delta.dfg.ca.gov/data/projects/?ProjectID=SLS
http://www.delta.dfg.ca.gov/data/projects/?ProjectID=20mm
http://www.delta.dfg.ca.gov/data/projects/?ProjectID=SKT.

3) Particle Tracking Modeling

The group requested 5 PTM scenarios for March 30. Scenario A was a constant negative 5000 cfs OMR flow. Scenario B was negative 5,000 cfs OMR flow for first 7 days, followed by negative 4,000 cfs for 8 days, followed by negative 3,000 cfs for 8 days, followed by negative 2,000 cfs for 8 days. Scenario C was negative 5,000 cfs OMR flow for first 7 days, followed by negative 2500 cfs for the remaining weeks. Scenario D was negative 5000 cfs OMR flow for first 14 days, followed by negative 2500 cfs for the remaining weeks. Scenario E was a constant negative 2500 cfs OMR flow. Results suggest that at constant negative 5000 cfs OMR flows, the 31-day entrainment risk for smelt larvae would be 47.5% at station 812 and 58.6% for station 815, but the ultimate fates of more than 50% of the particles would still be unaccounted for after 31 days. Particle flux past stations 902 and 914 into the south Delta suggest that eventual entrainment at the facilities might be closer to 62% and 72% for stations 812 and 815, respectively. For Scenario B, the 31-day entrainment risk for smelt larvae would be 22.0% for station 812 and 34.0% for station 815. For Scenario C, the 31-day entrainment risk for smelt larvae would be 14.6% for station 812 and 24.5% for station 815. For Scenario D, the 31-day entrainment risk for smelt larvae would be 22.2% for station 812 and 33.4% for station 815. For constant negative 2500 cfs OMR flow, the 31-day entrainment risk for smelt larvae would be 9.1% at station 812 and 19.0% for station 815. Similar to the first scenario, flux into the south

Delta was 1.5 times to over 2 times greater than 31 day entrainment levels, suggesting eventual entrainment would be much higher (30% to greater than 50%) under all scenarios. Even for scenario E, south Delta flux was 24.5% for station 812 and 37.5% for station 815.

The group believes that negative 4000 cfs OMR flows is adequately protective of longfin smelt larvae already in the system, because very few remain in the central and south Delta, and that no concentration of longfin smelt in the Sacramento River was vulnerable to entrainment through Three Mile Slough at current OMR levels.

The group felt that with the current environmental conditions (and females with hydrated, enlarged oocytes from the SKT survey #2) it is likely that delta smelt have begun spawning and that larvae are in the system. Because newly hatched delta smelt larvae are too small to be captured effectively by the 20 mm survey net or observed in samples at the CVP and SWP fish facilities, larvae may be present but undetected for a few weeks.

4) Salvage

No Delta smelt have been salvaged since 3-11 and no longfin smelt since 3-31. Delta smelt have been salvaged at the CVP on 2-11, 2-15,and 3-1 and at the SWP on 3-1, 3-3, 3-8 and 3-11 for a total expanded salvage of 24. Small juvenile longfin smelt were salvaged at the SWP on March 26 and the CVP on 2-27, 3-10, 3-22, 3-23, 3-24, 3-25, and 3-28 for a total expanded salvage of 28. Larval longfin smelt were salvaged at the CVP on February 25 and 26 and March 3, 8, 10, 16, and 24 and the SWP on March 4.

5) Discussion for Recommendation

With Sacramento River inflows into the Delta at about 11000 cfs, Qwest at -926, and X2 currently at about 73 km, the group felt OMR could be held at negative 4000 cfs primarily because of the lack of direct evidence of delta smelt hatching in the central or south Delta and limited vulnerability of longfin smelt larvae. The group recommends to the Service that OMR be set at negative 4000 cfs on a 14-day average for the week of April 6. This recommendation includes a requested change in OMR to negative 2000 cfs if any larval delta smelt are detected in salvage at either facility. The group will reconvene and potentially make further recommendations should a one-day, combined expanded salvage of adult delta smelt reach 20 or greater.

Longfin Smelt Advice

The group offers no new advice to the Department of Fish and Game regarding actions for longfin smelt. Current delta smelt advice will be protective of most longfin smelt larvae and small juveniles, the current life stages of concern.

Recent partial 20mm Survey results indicate very low densities of longfin smelt larvae in the central and south Delta, regions influenced by export pumping in the south Delta. Further, few longfin smelt larvae were present in the Sacramento River channel near Three Mile Slough to be drawn through into the central Delta by current exports. Longfin smelt larvae were transported

out of the central Delta and into Suisun Bay by net westward flows in early March. Relatively little additional longfin smelt hatching has been observed or is anticipated for coming weeks, so entrainment of longfin smelt is not expected to be substantial at OMR flows of negative 4000 advised for delta smelt.